

低功率射頻電機試驗報告

產品名稱	Biometric Recognition Device
申請廠商	FaceSec Japan株式会社
製造商	FaceSec Japan株式会社
廠牌	FaceSec Japan株式会社
主型號	BRD-WS-BD
操作頻率	UNII-1: 5150 - 5250MHz; UNII-2a: 5250 - 5350MHz UNII-2c: 5470 - 5725MHz; UNII-3: 5725 - 5850MHz
該產品樣品試驗依據 之試驗標準	低功率射頻電機技術規範 (低功率 0002 (LP0002) 109.07.01 版本)
試驗結果	合格

試驗機構: 倍科檢驗科技有限公司(林口實驗室)

機構地址: 桃園市龜山區文德二路6號

案件受理日期: 109 年 11 月 23 日

報告發行日期: 109 年 12 月 28 日

報告編號: RDG201102003-07B


陳園儒 簽章

附註:

1. 未經本實驗室書面許可, 不得部份複製本報告內容。
2. 本報告僅對檢送樣品負責, 且分離使用無效。
3. 本報告需加本所負責人簽名始生效。

報告發行紀錄:

版次	報告號碼	發行日期	說明
1.0	RDG201102003-07B	2020/12/28	報告發行

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1. 一般描述

1.1 待測設備樣品/特性

產品名稱	Biometric Recognition Device										
產品型號	BRD-WS-BD										
申請者	FaceSec Japan株式会社										
地址	東京都千代田区岩本町三丁目5番14号										
製造廠商	FaceSec Japan株式会社										
使用頻率	UNII-1: 5150 - 5250MHz; UNII-2a: 5250 -5350MHz; UNII-2c: 5470 - 5725MHz UNII-3: 5725 - 5850MHz										
傳輸速率	IEEE 802.11a Mode: 54-6 Mbps IEEE 802.11n HT20 / ac VHT20 Mode: MCS 0-7 IEEE 802.11n HT40 / ac VHT40 Mode: MCS 0-7 IEEE 802.11ac VHT80 Mode: MCS 0-9										
調變方式	OFDM										
天線資訊	<table border="1"> <thead> <tr> <th>天線型態</th><th>廠牌</th><th>型號</th><th>Gain</th></tr> </thead> <tbody> <tr> <td>PIFA Antenna</td><td>YJC</td><td>YJC-6N150-B27</td><td>1.60 dBi</td></tr> </tbody> </table>			天線型態	廠牌	型號	Gain	PIFA Antenna	YJC	YJC-6N150-B27	1.60 dBi
天線型態	廠牌	型號	Gain								
PIFA Antenna	YJC	YJC-6N150-B27	1.60 dBi								
輸出功率	For UNII-1: IEEE 802.11a: 11.70 dBm IEEE 802.11n HT20: 11.71 dBm IEEE 802.11n HT40: 11.64 dBm For UNII-2a: IEEE 802.11a: 11.68 dBm IEEE 802.11n HT20: 11.72 dBm IEEE 802.11n HT40: 11.60 dBm For UNII-2c: IEEE 802.11a: 12.03 dBm IEEE 802.11n HT20: 12.12 dBm IEEE 802.11n HT40: 11.60 dBm For UNII-3: IEEE 802.11a: 12.66 dBm IEEE 802.11n HT20: 12.60 dBm IEEE 802.11n HT40: 11.60 dBm										
測試日期	2020-11-24 – 2020-12-26										
供應電源	Adapter (FSP050-DIBAN2): I/P: 100-240Vac, 50/60Hz, 1.5A O/P: 12Vdc, 4.16A										

1.2 測試實驗室資料

實驗室認可登錄	中華民國實驗室認證體系 認可編號：TAF: 3546 認證有效期間：108年05月03日至111年05月02日止 認可頻率範圍9kHz ~ 40GHz。
測試場地/實驗室地址	桃園市龜山區文德二路6號
實驗室名稱	倍科檢驗科技有限公司(林口實驗室)
電話/傳真	03-397-1072/03-397-1027

1.3 試驗室之測試不確定度

Parameter	Expanded Measurement uncertainty
RF output power with Power Meter	± 1.488 dB
Occupied Channel Bandwidth	± 453.927 Hz
RF Conducted test with Spectrum	± 2.77 dB
AC Power Line Conducted Emission	± 2.66 dB
Radiated Below 1G	± 3.78 dB
Radiated Above 1G	± 4.29 dB

The test results with statement of conformity, the decision rules are based on the specifications and standards. The test results will not take the measurement uncertainty into account.

2. 測試規範

2.1 適用規範及條文

項次	測試項目	適用規範	測試結果	量測設備
1.	電源線傳導干擾	低功率射頻電機技術規範3.3節	請參閱5.5節	請參閱4節
2.	不必要發射	低功率射頻電機技術規範5.7.4.1節, 低功率射頻電機技術規範5.7.4.2節 低功率射頻電機技術規範5.7.4.6節 低功率射頻電機技術規範3.5節 低功率射頻電機技術規範3.6節	請參閱6.5節	請參閱4節
3.	開放頻帶邊緣之發射	低功率射頻電機技術規範5.7.4.6節	請參閱7.5節	請參閱4節
4.	發射頻寬測試	低功率射頻電機技術規範5.7.3.4節和5.7.5節	請參閱8.5節	請參閱4節
5.	輸出功率	低功率射頻電機技術規範5.7.3.1節 (1)(A),(2)(A),(3)(A),4(A),4.7.3.2(1)節和5.7.3.3(1)節	請參閱9.5節	請參閱4節
6.	功率密度	低功率射頻電機技術規範5.7.3.1節 (1)(B),(2)(B),(3)(B),4(B),4.7.3.2(2)節和5.7.3.3(2)節	請參閱10.5節	請參閱4節
7	電波暴露量之評估	低功率射頻電機技術規範5.20.2.2節	請參閱11.2節	-----

2.2 限制使用之頻帶

根據<國家通訊傳播委員會低功率射頻電機技術規範 3.5 節>，任何低功率射頻電機之主波皆不得使用下表所列各頻帶內之頻率；低功率射頻電機落於下表所列頻帶內之混附發射，其電場強度必須符合第3.6 節的限制規定。

頻率 (MHz)	頻率 (MHz)	頻率 (MHz)
0.090 - 0.110	167.72 - 173.20	3260.0 - 3267.0
0.490 - 0.510	240.00 - 285.00	3332.0 - 3339.0
2.172 - 2.198	322.00 - 335.40	3345.8 - 3358.0
3.013 - 3.033	399.90 - 410.00	3500.0 - 4400.0
4.115 - 4.198	608.00 - 614.00	4500.0 - 5250.0
5.670 - 5.690	703.00 - 748.00	5350.0 - 5460.0
6.200 - 6.300	758.00 - 803.00	7250.0 - 7750.0
8.230 - 8.400	825.00 - 915.00	8025.0 - 8500.0
12.265 - 12.600	930.00 - 1240.0	9000.0 - 9200.0
13.340 - 13.430	1300.0 - 1427.0	9300.0 - 9500.0
14.965 - 15.020	1435.0 - 1626.5	10600 - 12700
16.700 - 16.755	1660.0 - 1785.0	13250 - 13400
19.965 - 20.020	1805.0 - 1880.0	14470 - 14500
25.500 - 25.700	1885.0 - 1900.0	15350 - 16200
37.475 - 38.275	1905.0 - 1985.0	17700 - 21400
73.500 - 75.400	2010.0 - 2025.0	22010 - 23120
108.00 - 138.00	2110.0 - 2170.0	23600 - 24000
149.90 - 150.05	2200.0 - 2300.0	31200 - 31800
156.70 - 156.90	2310.0 - 2390.0	36430 - 36500
162.01 - 167.17	2483.5 - 2900.0	38600 以上

3. 受測裝置之系統說明

3.1 測試模式

- 1) EUT & Peripherals setup diagram is shown in appendix setup photos.
- 2) 樣品設定 Low, Middle 與 High Channel, 並執行法規規定之測試項目。
- 3) Pre-scan with three orthogonal axis, and worse case as X axis , Below 1G test worst Power mode.

Worst Case of Power Setting					
EUT Exercise Software			Qualcomm Radio Control Tool 4.0.00125		
Configuration	N _{TX}	UNII Band	Low CH	Mid CH	High CH
802.11a mode	1	UNII-1	12	12	12
		UNII-2a	12	12	12
		UNII-2c	12	12	12
		UNII-3	12	12	13
802.11n HT20 mode	1	UNII-1	12	12	12
		UNII-2a	12	12	12
		UNII-2c	12	12	12
		UNII-3	12	12	13
802.11n HT40 mode	1	UNII-1	12	-	12
		UNII-2a	12	-	12
		UNII-2c	12	12	12
		UNII-3	12	-	12

3.2 輔助測試週邊設備名稱描述

測試週邊: 未隨貨附賣, 由實驗室或廠商自行提供併同測試

No.	Description	Brand	Model Number
1.	Notebook	DELL	Latitude E6410
2.	Adapter	FSP	FSP050-DIBAN2
3.	USB Cable	BACL	BACL-USB
4.	LAN Cable	BACL	BACL-LAN

3.3 占空比測試

Duty	Duty cycle (%)	Duty factor (dB)
802.11a	96	0.18
802.11n HT20	96	0.18
802.11n HT40	88	0.56

Duty cycle (D) = Tx on(ms)/(Tx on+off(ms), Duty factor = 10*log(1/D)

3.4 測試資訊與環境

Test Site	Test Date	Temperature (°C)	Relative Humidity (%)	Test Engineer
Conduction (Con-01)	2020-11-24	25.3	56	Brian Chang
Radiated (966A)	2020-12-15 – 2020-12-26	19.9	61	Leo Cheng
Conducted (TH-02)	2020-12-03	22.5	60	Brian Chang

4. 量測儀器一覽表

儀器名稱	廠商	型號	序號	校驗日期	下次校驗日期
AC Line Conduction Room (CON-01)					
LISN	Rohde & Schwarz	ENV216	100010	2020/09/14	2021/09/13
EMI Test Receiver	Rohde & Schwarz	ESR3	102430	2020/05/07	2021/05/06
Pulse Limiter	SCHWARZBECK	VSTD 9561-F	00432	2020/09/11	2021/09/10
RF Cable	EMCI	EMCCFD300-BM-BM-8000	180526	2020/08/18	2021/08/17
Software	Audix	e3 v9	E3LK-03	N.C.R	N.C.R
Radiation 3M Room (966A)					
Active Loop	EMCO	6502	0001-3322	2020/03/16	2021/03/15
Bilog Antenna/6 dB Attenuator	SUNOL SCIENCES & EMEC /EMCI	JB3/N-6-06	A111513/AT-N0668	2020/03/19	2021/03/19
Horn Antenna	ETS-Lindgren	3115	00109141	2020/07/15	2021/07/14
Horn Antenna	ETS-Lindgren	3160-09	00123852	2020/07/07	2021/07/06
Preamplifier	A.H. Systems	PAM-0118	478	2020/05/05	2021/05/04
Preamplifier	A.H. Systems	PAM-1840VH	174	2020/03/25	2021/03/24
Signal and Spectrum Analyzer	Rohde & Schwarz	FSV40	101434	2020/05/07	2021/05/06
Microflex Cable (1m)	EMCI	EMC106-SM-SM-2000	180515	2020/08/07	2021/08/07
Microflex Cable (2m)	MTJ	H0919	00000-MT28A-100	2020/08/07	2021/08/07
Microflex Cable (8m)	UTIFLEX	UFA210A-1-3149-300300	MFR 64639 232490-001	2020/08/07	2021/08/07
Turn Table	Chaintek	T-200-S-1	003501	N.C.R	N.C.R
Antenna Tower	Chaintek	MBD-400-1	003504	N.C.R	N.C.R
Controller	Chaintek	3000-1	003507	N.C.R	N.C.R
Software	Audix	e3 v9	E3LK-01	N.C.R	N.C.R
Conducted Room (TH-01)					
Signal Analyzer 40GHZ	Rohde & Schwarz	FSV40-N	102248	2020/09/16	2021/09/15
USB Wideband Power Sensor	Agilent	U2021XA	MY56120026	2020/09/14	2021/09/13

***Statement of Traceability:** The testing equipment's listed above have finished the calibration by Electronics Testing Center, Taiwan (ETC) or other laboratories which were accredited by TAF or equivalent organizations. The calibration result could be traceable to the International System of Units (SI).

5. 電源線傳導干擾之量測

5.1 適用標準

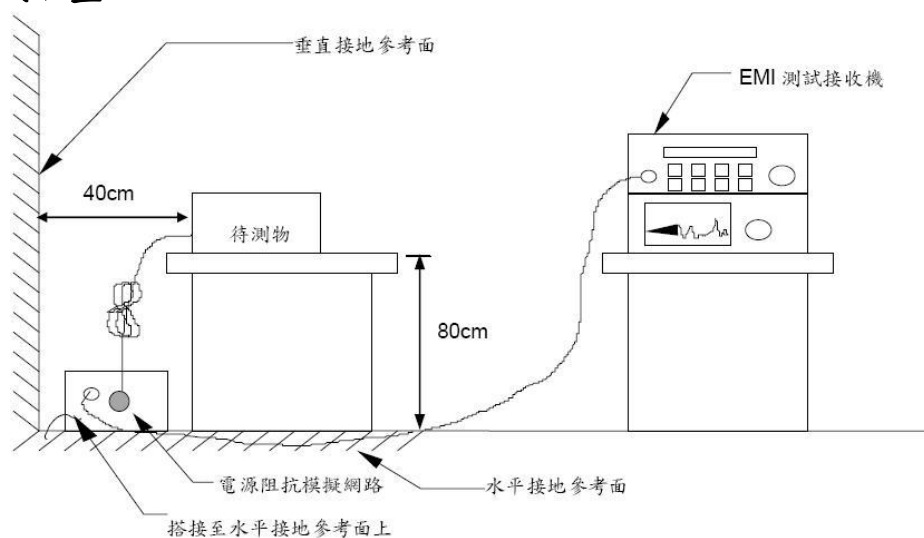
依據國家通訊傳播委員會低功率射頻電機技術規範之2.3節，電源傳導干擾之限制要求如下：

頻率 (MHz)	傳導限制值 (dB μ V)	
	準峰值 (Quasi – peak)	平均值(Average)
0.15 – 0.5	66 – 56	56 – 46
0.5 – 5	56	46
5 – 30	60	50

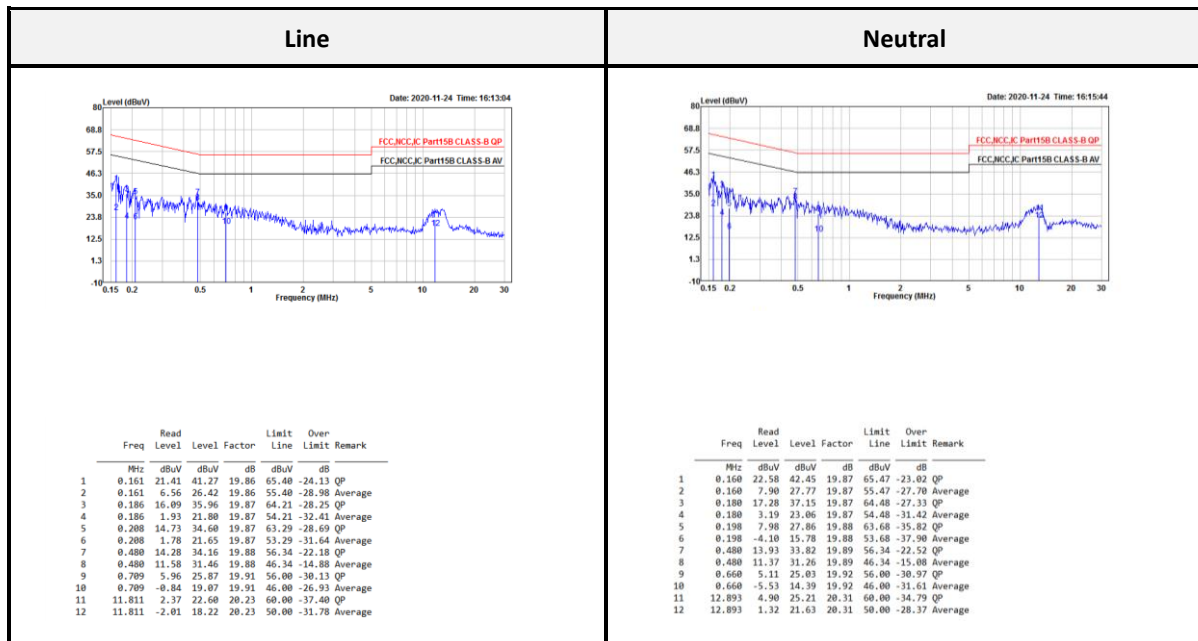
5.2 測試方法

將待測物置於0.8米高的非金屬桌面，使其在工作狀態，待測物電源線接至電源線阻抗穩定網路上，從測試接收機記錄頻率由0.15MHz至30MHz之間之電源線傳導放射強度。

5.3 測試配置



5.4 傳導干擾之量測結果



Note1:

Level = Read Level + Factor

Over Limit = Level – Limit Line

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss + Attenuator

6. 不必要發射之量測

6.1 適用標準

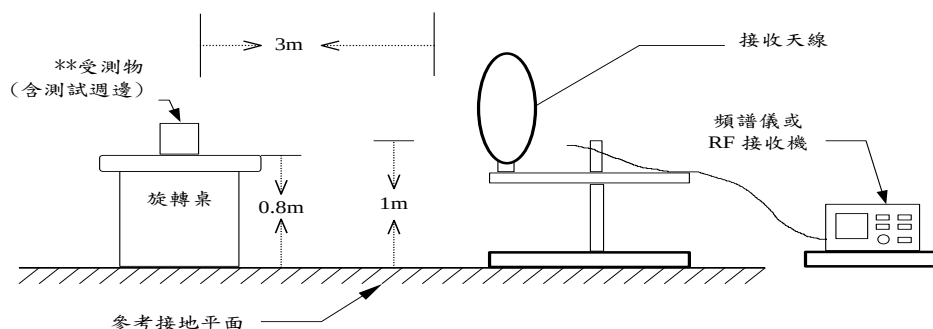
1. 依據國家通訊傳播委員會低功率射頻電機技術規範4.7.4.1節之規定，在5.15GHz～5.35GHz及5.470GHz～5.725GHz頻段操作的發射器：帶外發射之有效等向輻射功率(EIRP) $\leq$ -27 dBm/MHz。
2. 據國家通訊傳播委員會低功率射頻電機技術規範4.7.4.2節之規定，在5.725GHz～5.850GHz的頻段操作之發射器：所有頻帶邊緣向外5MHz內頻率之發射，有效等向輻射功率(EIRP) $\leq$ 27dBm/MHz～15.6dBm/MHz；所有頻帶邊緣向外5MHz～25MHz，有效等向輻射功率(EIRP) $\leq$ 15.6dBm/MHz～10dBm/MHz；所有頻帶邊緣外25MHz～75MHz，有效等向輻射功率(EIRP) $\leq$ 10dBm/MHz～-27dBm/MHz；所有頻帶邊緣外 $\geq$ 75MHz的頻率之發射，有效等向輻射功率(EIRP) $\leq$ -27dBm/MHz。
3. 依據國家通訊傳播委員會低功率射頻電機技術規範4.7.4.6節之規定，不必要發射頻率屬2.7規定頻段者，應符合2.8之規定。

6.2 量測方法

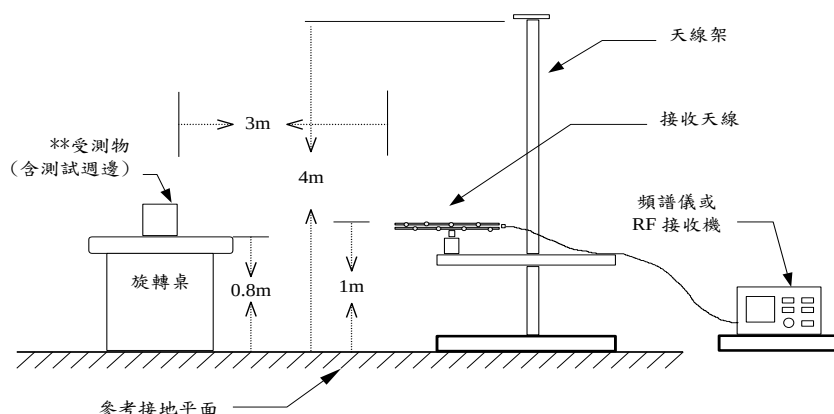
將待測物置於 0.8 or 1.5 米高的非金屬桌面，使其在工作狀態，接收天線置於 3 米外相同的高度。待測物分別要垂直或水平放置，而且桌面要 360 度旋轉，另外接收天線也要從 1.0 米至 4.0 米升降變化，以找出最大的輻射電場強度，接收天線置於水平、垂直極向各執行測試一次。

6.3 測試配置

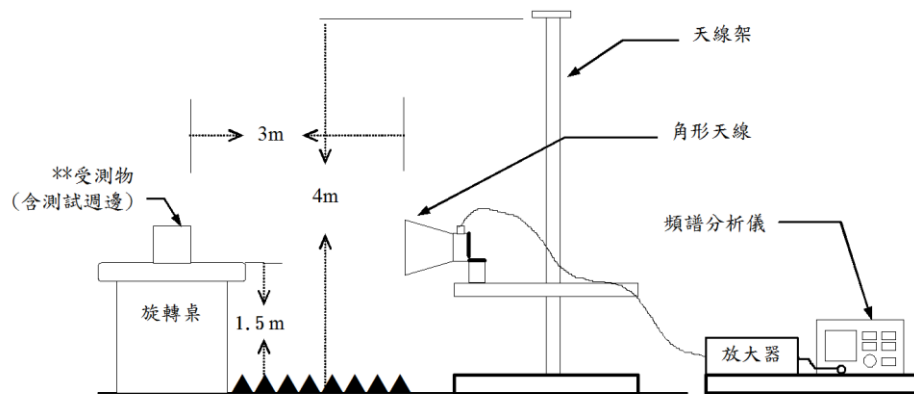
量測頻率9kHz-30MHz之測試配置



量測頻率30MHz-1GHz之測試配置



量測頻率1GHz以上之測試配置



6.4 場強輻射之量測結果

發射機 / 接收機 其它不必要之訊號 (9kHz ~ 30MHz)

此頻率之干擾值低於限制值20dB以下，被考量為背景雜訊值並不予記錄。

發射機 / 接收機 其它不必要之訊號 (30MHz ~ 1GHz)

此案件測試模為 Worst Power

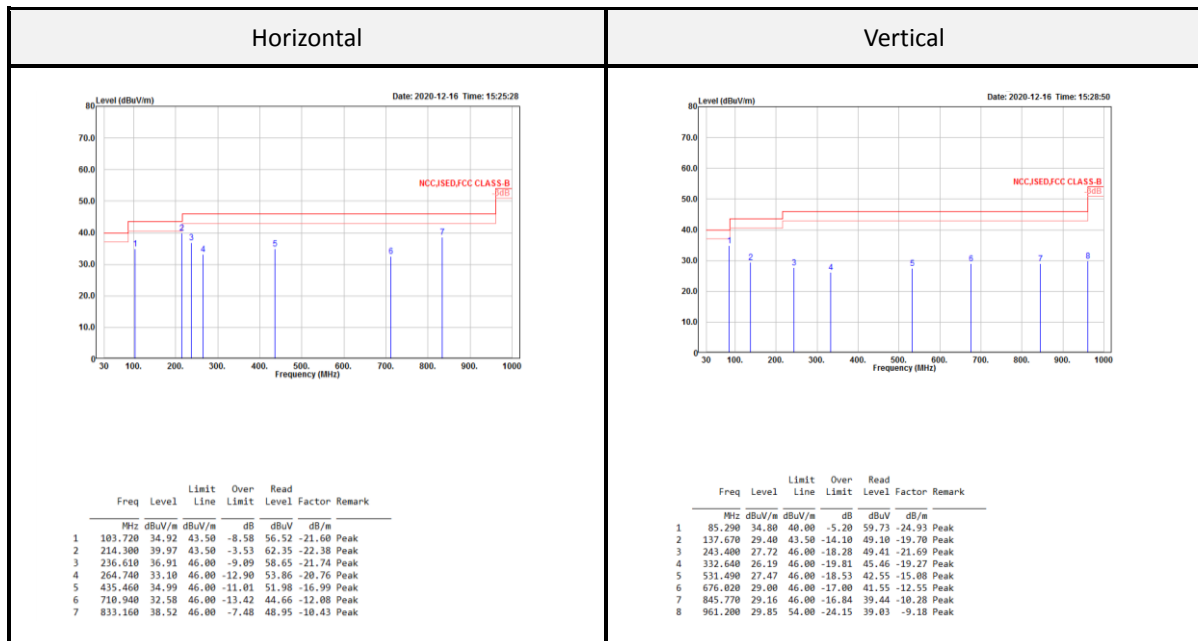
發射機 其它不必要之訊號 (1GHz ~ 40GHz)

此案件測試模式分別為Low、Mid、High CH.

接收機 其它不必要之訊號 (1GHz ~ 40GHz)

此案件測試模式分別為Receiver 模式

場強輻射之量測值 (TX / 1GHz 以下)



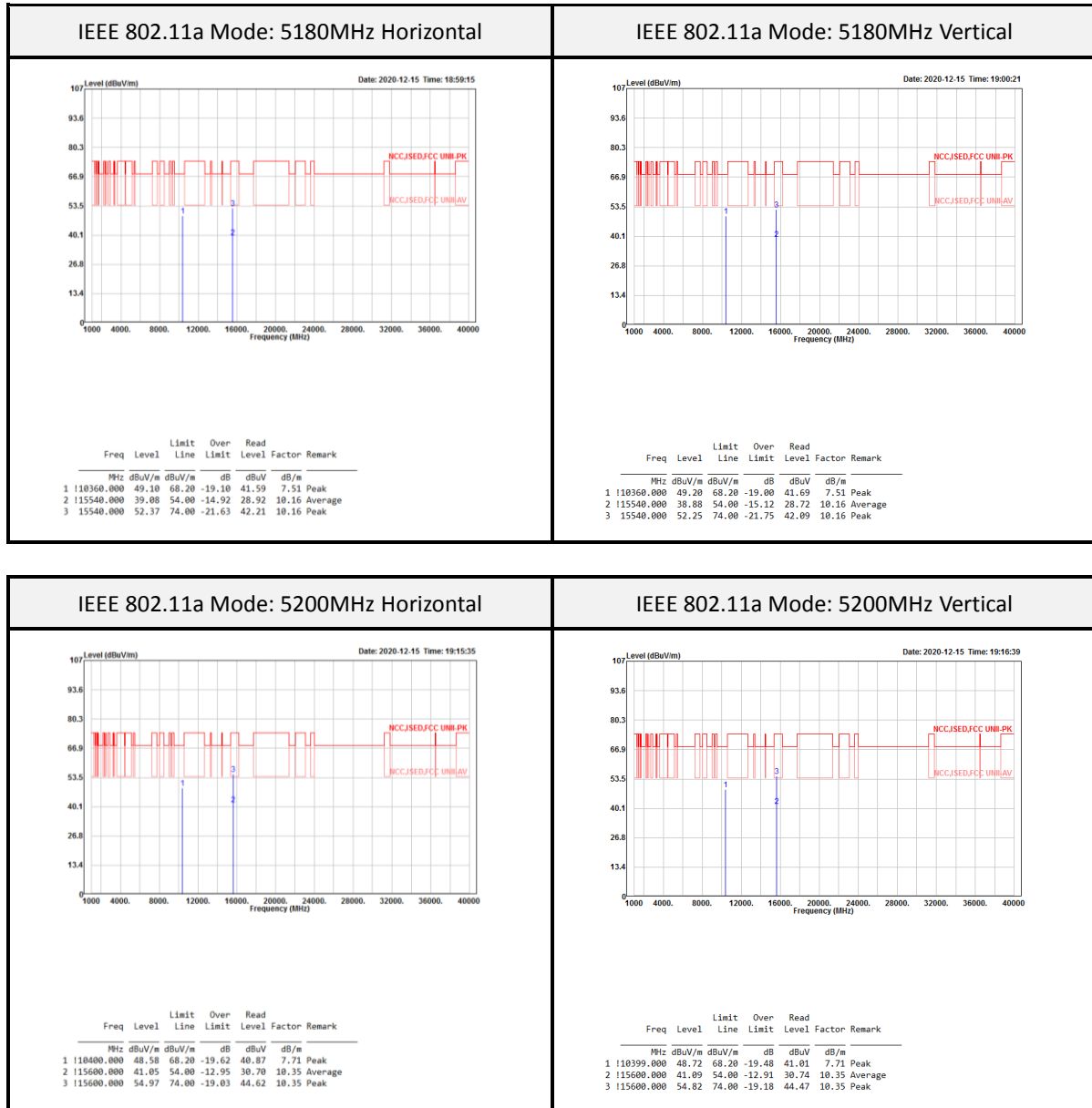
Note1:

Result = Reading + Correct Factor

Margin = Result - Limit

Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain

發射機其它不必要之訊號 (TX / 1GHz 以上)



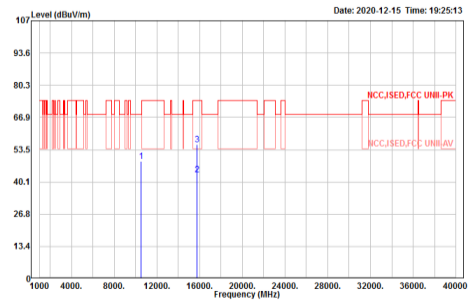
Note:

Result = Reading + Correct Factor

Margin = Result – Limit

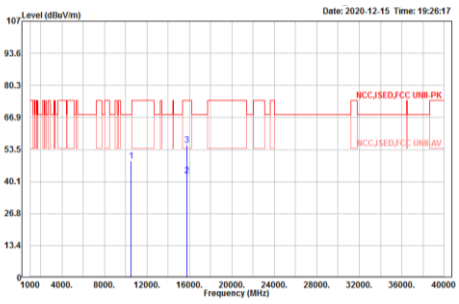
Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

IEEE 802.11a Mode: 5240MHz Horizontal



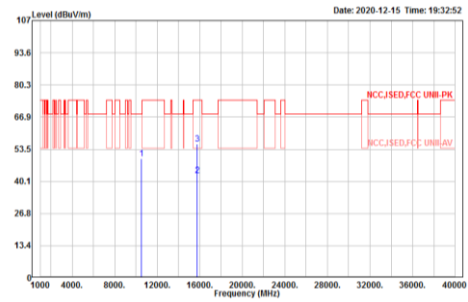
Freq	Level	Limit	Over	Read	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
1 110480.000	48.84	68.20	-19.36	41.03	7.81	Peak
2 115720.000	43.22	54.00	-10.78	32.94	10.28	Average
3 115720.000	55.60	74.00	-18.40	45.32	10.28	Peak

IEEE 802.11a Mode: 5240MHz Vertical



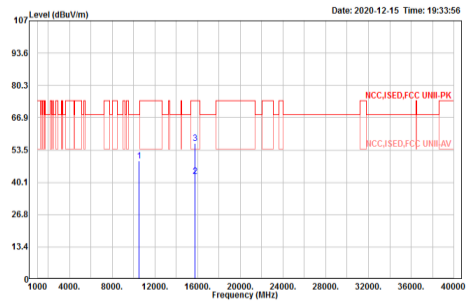
Freq	Level	Limit	Over	Read	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
1 110480.000	48.75	68.20	-19.45	40.94	7.81	Peak
2 115720.000	42.62	54.00	-11.38	32.34	10.28	Average
3 115720.000	55.50	74.00	-18.50	45.22	10.28	Peak

IEEE 802.11a Mode: 5260MHz Horizontal



Freq	Level	Limit	Over	Read	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
1 110520.000	49.60	68.20	-18.60	41.77	7.83	Peak
2 115780.000	42.70	54.00	-11.30	32.28	10.42	Average
3 115780.000	55.60	74.00	-18.40	45.18	10.42	Peak

IEEE 802.11a Mode: 5260MHz Vertical



Freq	Level	Limit	Over	Read	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
1 110520.000	49.12	68.20	-19.08	41.29	7.83	Peak
2 115780.000	42.76	54.00	-11.24	32.34	10.42	Average
3 115780.000	56.39	74.00	-17.61	45.97	10.42	Peak

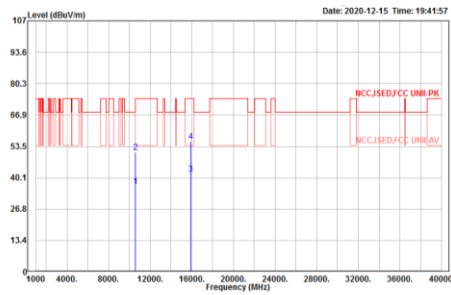
Note:

Result = Reading + Correct Factor

Margin = Result – Limit

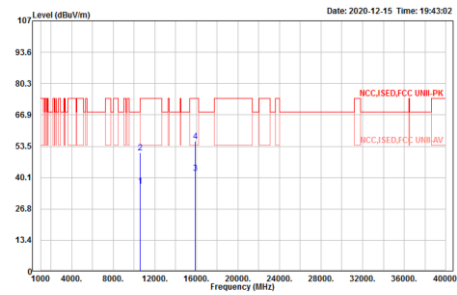
Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

IEEE 802.11a Mode: 5300MHz Horizontal



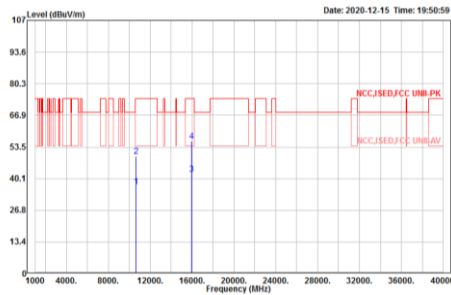
Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 110600.000	36.58	54.00	-17.42	28.34	8.24	Average	
2 10600.000	50.95	74.00	-23.05	42.71	8.24	Peak	
3 115900.000	41.83	54.00	-12.17	30.76	11.07	Average	
4 115900.000	55.56	74.00	-18.44	44.49	11.07	Peak	

IEEE 802.11a Mode: 5300MHz Vertical



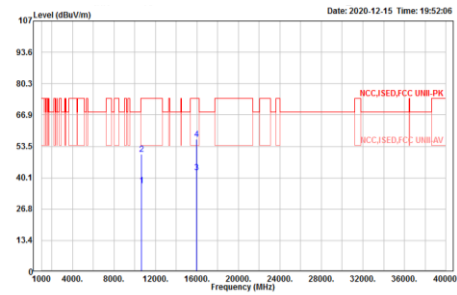
Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 110600.000	36.66	54.00	-17.34	28.42	8.24	Average	
2 10600.000	50.70	74.00	-23.30	42.46	8.24	Peak	
3 115900.000	42.10	54.00	-11.90	31.03	11.07	Average	
4 115900.000	55.80	74.00	-18.20	44.73	11.07	Peak	

IEEE 802.11a Mode: 5320MHz Horizontal



Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 110640.000	36.08	54.00	-17.12	28.56	8.32	Average	
2 10640.000	49.71	74.00	-24.29	41.39	8.32	Peak	
3 115960.000	42.11	54.00	-11.89	31.65	10.46	Average	
4 115960.000	56.00	74.00	-18.00	45.54	10.46	Peak	

IEEE 802.11a Mode: 5320MHz Vertical



Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 110640.000	36.72	54.00	-17.28	28.40	8.32	Average	
2 10640.000	50.12	74.00	-23.88	41.80	8.32	Peak	
3 115960.000	42.34	54.00	-11.66	31.88	10.46	Average	
4 115960.000	56.68	74.00	-17.32	46.22	10.46	Peak	

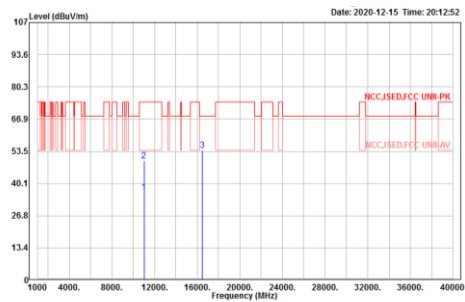
Note:

Result = Reading + Correct Factor

Margin = Result – Limit

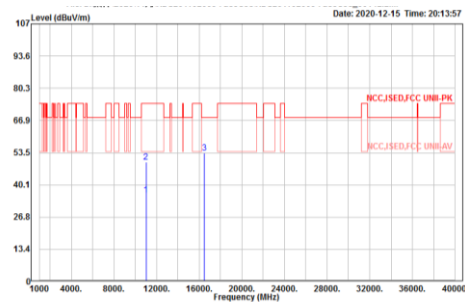
Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

IEEE 802.11a Mode: 5500MHz Horizontal



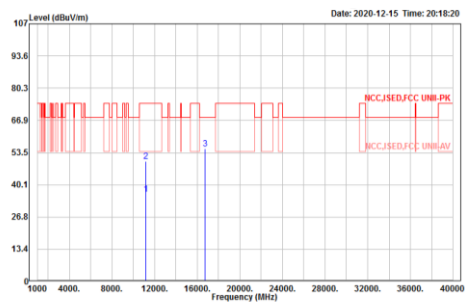
Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 111800.000	36.58	54.00	-17.42	27.94	8.64	Average	
2 11800.000	49.65	74.00	-24.35	41.01	8.64	Peak	
3 116500.000	54.07	68.20	-14.13	42.45	11.62	Peak	

IEEE 802.11a Mode: 5500MHz Vertical



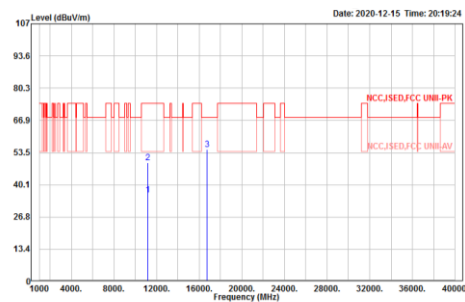
Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 111800.000	35.85	54.00	-18.15	27.21	8.64	Average	
2 11800.000	49.55	74.00	-24.45	40.91	8.64	Peak	
3 116500.000	53.36	68.20	-14.84	41.74	11.62	Peak	

IEEE 802.11a Mode: 5580MHz Horizontal



Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 11160.000	36.29	54.00	-17.71	27.85	8.44	Average	
2 11160.000	49.80	74.00	-24.20	41.36	8.44	Peak	
3 116740.000	55.14	68.20	-13.06	42.18	12.96	Peak	

IEEE 802.11a Mode: 5580MHz Vertical



Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 11160.000	36.03	54.00	-17.97	27.59	8.44	Average	
2 11160.000	49.29	74.00	-24.71	40.85	8.44	Peak	
3 116740.000	54.83	68.20	-13.37	41.87	12.96	Peak	

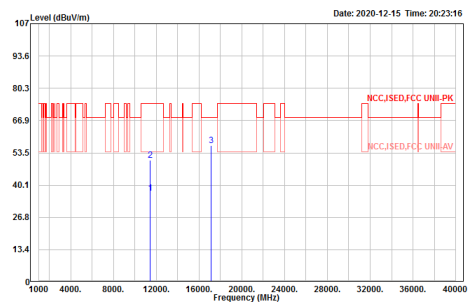
Note:

Result = Reading + Correct Factor

Margin = Result – Limit

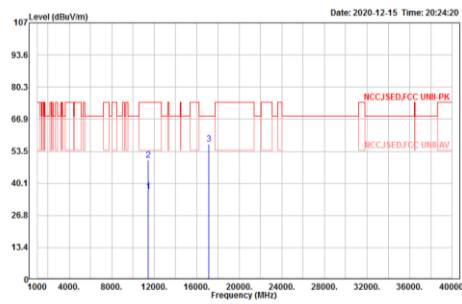
Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

IEEE 802.11a Mode: 5700MHz Horizontal



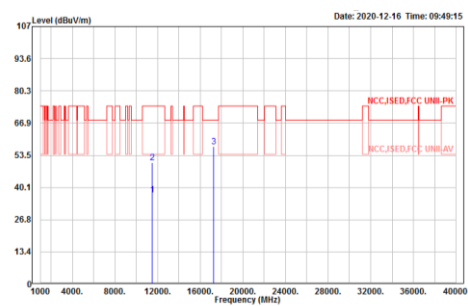
Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 11400.000	36.81	54.00	-17.19	28.06	8.75	Average	
2 11400.000	50.42	74.00	-23.58	41.67	8.75	Peak	
3 11700.000	56.67	68.20	-11.53	41.49	15.18	Peak	

IEEE 802.11a Mode: 5700MHz Vertical



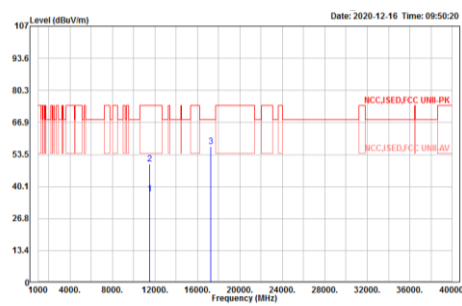
Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 11400.000	36.87	54.00	-17.13	28.12	8.75	Average	
2 11400.000	49.99	74.00	-24.01	41.24	8.75	Peak	
3 11700.000	56.69	68.20	-11.51	41.51	15.18	Peak	

IEEE 802.11a Mode: 5745MHz Horizontal



Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 11490.000	37.20	54.00	-16.80	28.65	8.55	Average	
2 11490.000	50.42	74.00	-23.58	41.87	8.55	Peak	
3 117235.000	56.99	68.20	-11.21	41.19	15.80	Peak	

IEEE 802.11a Mode: 5745MHz Vertical



Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 11490.000	37.00	54.00	-17.00	28.45	8.55	Average	
2 11490.000	49.50	74.00	-24.50	40.95	8.55	Peak	
3 117235.000	56.85	68.20	-11.35	41.05	15.80	Peak	

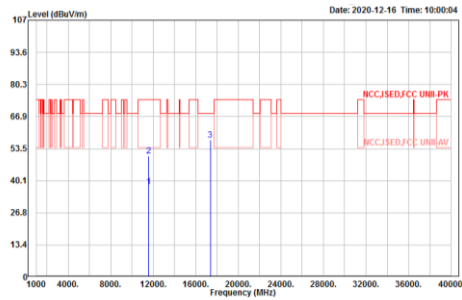
Note:

Result = Reading + Correct Factor

Margin = Result – Limit

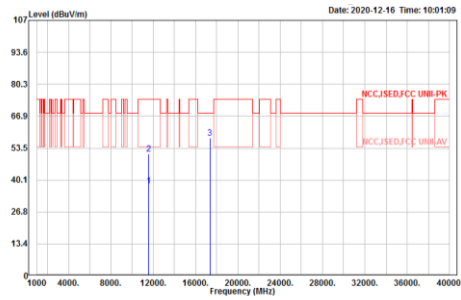
Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

IEEE 802.11a Mode: 5785MHz Horizontal



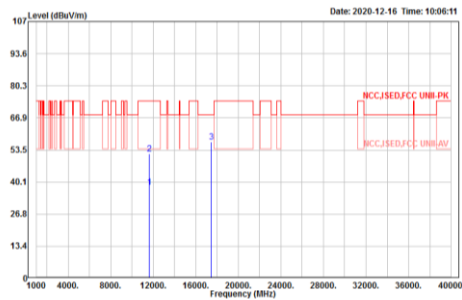
Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 111570.000	37.64	54.00	-16.36	28.87	8.77	Average	
2 11570.000	50.37	74.00	-23.63	41.60	8.77	Peak	
3 117355.000	57.12	68.20	-11.08	41.49	15.63	Peak	

IEEE 802.11a Mode: 5785MHz Vertical



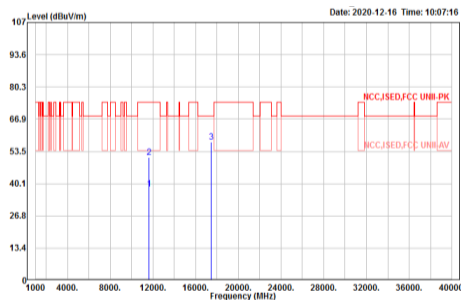
Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 111570.000	37.63	54.00	-16.37	28.86	8.77	Average	
2 11570.000	50.37	74.00	-23.63	42.20	8.77	Peak	
3 117355.000	57.63	68.20	-10.57	42.00	15.63	Peak	

IEEE 802.11a Mode: 5825MHz Horizontal



Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 111650.000	37.88	54.00	-16.12	28.49	9.39	Average	
2 11650.000	51.76	74.00	-22.24	42.37	9.39	Peak	
3 117475.000	56.70	68.20	-11.50	40.85	15.85	Peak	

IEEE 802.11a Mode: 5825MHz Vertical



Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 111650.000	37.98	54.00	-16.02	28.59	9.39	Average	
2 11650.000	51.02	74.00	-22.98	41.63	9.39	Peak	
3 117475.000	57.51	68.20	-10.69	41.66	15.85	Peak	

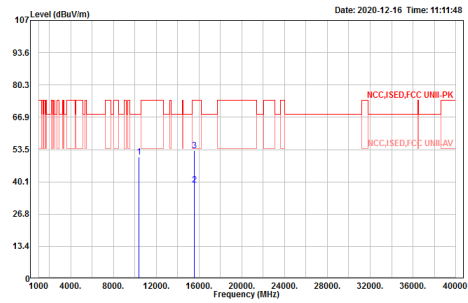
Note:

Result = Reading + Correct Factor

Margin = Result – Limit

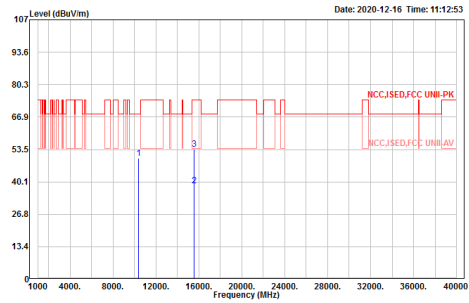
Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

IEEE 802.11n HT20 Mode: 5180MHz Horizontal



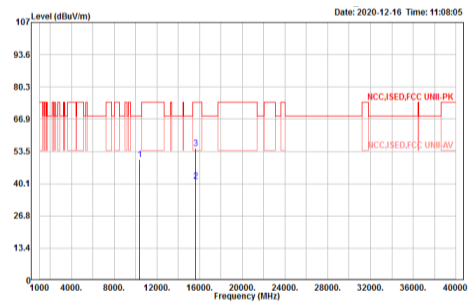
Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 110360.000	50.48	68.20	-17.72	42.97	7.51	Peak	
2 115540.000	38.94	54.00	-15.06	28.78	10.16	Average	
3 15540.000	52.92	74.00	-21.08	42.76	10.16	Peak	

IEEE 802.11n HT20 Mode: 5180MHz Vertical



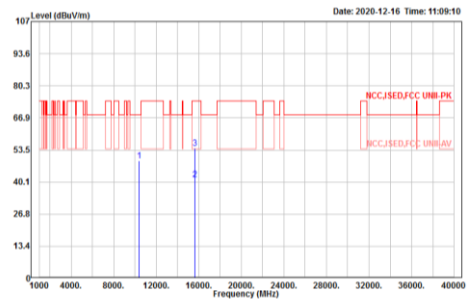
Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 110360.000	49.92	68.20	-18.28	42.41	7.51	Peak	
2 115540.000	38.46	54.00	-15.54	28.30	10.16	Average	
3 15540.000	53.74	74.00	-20.26	43.58	10.16	Peak	

IEEE 802.11n HT20 Mode: 5200MHz Horizontal



Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 110400.000	50.23	68.20	-17.97	42.52	7.71	Peak	
2 115600.000	41.19	54.00	-12.81	30.84	10.35	Average	
3 115600.000	54.94	74.00	-19.06	44.59	10.35	Peak	

IEEE 802.11n HT20 Mode: 5200MHz Vertical



Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 110400.000	48.88	68.20	-19.32	41.17	7.71	Peak	
2 115600.000	41.11	54.00	-12.89	30.76	10.35	Average	
3 115600.000	54.35	74.00	-19.65	44.00	10.35	Peak	

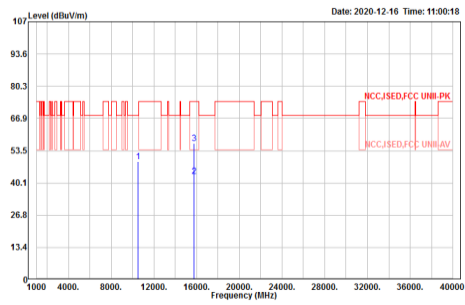
Note:

Result = Reading + Correct Factor

Margin = Result – Limit

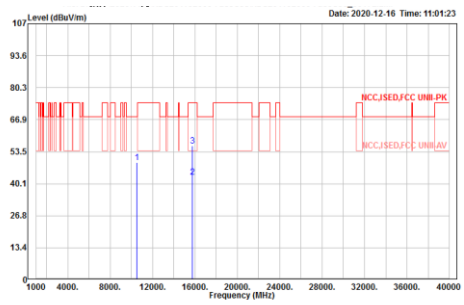
Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

IEEE 802.11n HT20 Mode: 5240MHz Horizontal



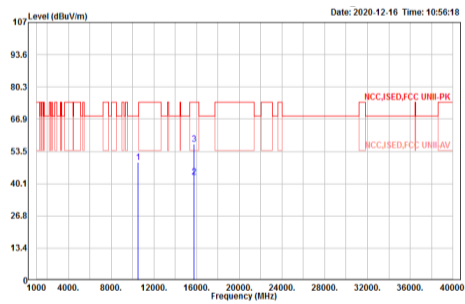
Freq	Level	Limit	Over	Read	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
1 110480.000	49.13	68.20	-19.07	41.32	7.81	Peak
2 115720.000	42.85	54.00	-11.15	32.57	10.28	Average
3 115720.000	56.55	74.00	-17.45	46.27	10.28	Peak

IEEE 802.11n HT20 Mode: 5240MHz Vertical



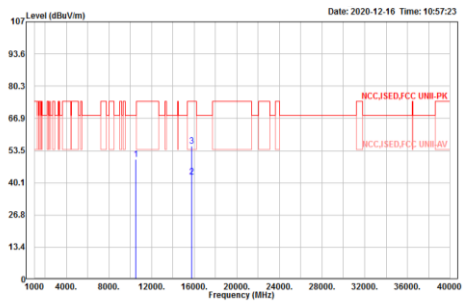
Freq	Level	Limit	Over	Read	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
1 110480.000	49.07	68.20	-19.13	41.26	7.81	Peak
2 115720.000	42.77	54.00	-11.23	32.49	10.28	Average
3 115720.000	55.99	74.00	-18.01	45.71	10.28	Peak

IEEE 802.11n HT20 Mode: 5260MHz Horizontal



Freq	Level	Limit	Over	Read	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
1 110520.000	49.05	68.20	-19.15	41.22	7.83	Peak
2 115780.000	42.82	54.00	-11.18	32.40	10.42	Average
3 115780.000	56.49	74.00	-17.51	46.07	10.42	Peak

IEEE 802.11n HT20 Mode: 5260MHz Vertical



Freq	Level	Limit	Over	Read	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
1 110516.000	49.83	68.20	-18.37	42.01	7.82	Peak
2 115780.000	42.73	54.00	-11.27	32.31	10.42	Average
3 115780.000	55.51	74.00	-18.49	45.09	10.42	Peak

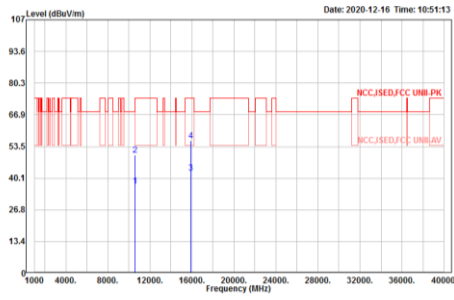
Note:

Result = Reading + Correct Factor

Margin = Result – Limit

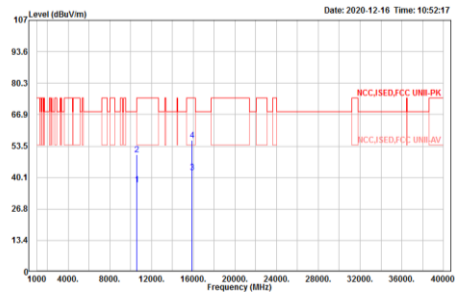
Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

IEEE 802.11n HT20 Mode: 5300MHz Horizontal



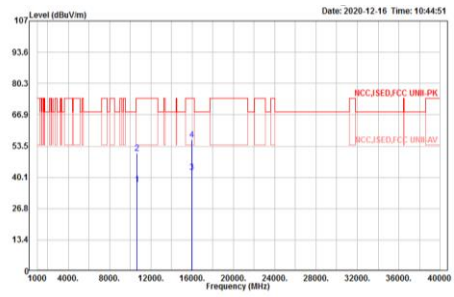
Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 110640.000	36.78	54.00	-17.22	28.54	8.24	Average	
2 10640.000	50.01	74.00	-23.99	41.77	8.24	Peak	
3 115900.000	42.28	54.00	-11.72	31.21	11.07	Average	
4 115900.000	55.97	74.00	-18.03	44.90	11.07	Peak	

IEEE 802.11n HT20 Mode: 5300MHz Vertical



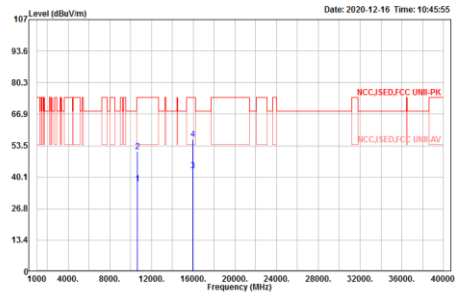
Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 110640.000	37.18	54.00	-16.82	28.94	8.24	Average	
2 10640.000	50.00	74.00	-24.00	41.76	8.24	Peak	
3 115900.000	42.27	54.00	-11.73	31.20	11.07	Average	
4 115900.000	55.87	74.00	-18.13	44.80	11.07	Peak	

IEEE 802.11n HT20 Mode: 5320MHz Horizontal



Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 110640.000	37.07	54.00	-16.93	28.75	8.32	Average	
2 10640.000	50.36	74.00	-23.64	42.04	8.32	Peak	
3 115960.000	42.35	54.00	-11.65	31.89	10.46	Average	
4 115960.000	56.16	74.00	-17.84	45.70	10.46	Peak	

IEEE 802.11n HT20 Mode: 5320MHz Vertical



Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 110640.000	37.27	54.00	-16.73	28.95	8.32	Average	
2 10640.000	50.99	74.00	-23.01	42.67	8.32	Peak	
3 115960.000	42.83	54.00	-11.17	32.37	10.46	Average	
4 115960.000	56.23	74.00	-17.77	45.77	10.46	Peak	

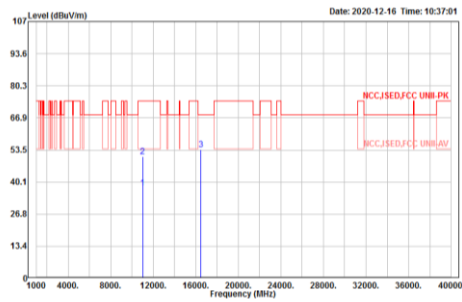
Note:

Result = Reading + Correct Factor

Margin = Result – Limit

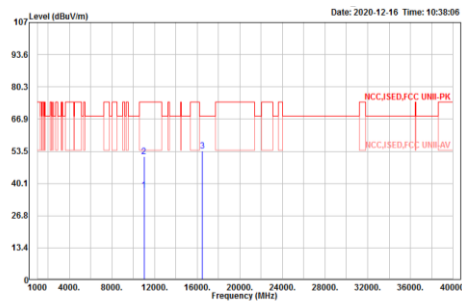
Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

IEEE 802.11n HT20 Mode: 5500MHz Horizontal



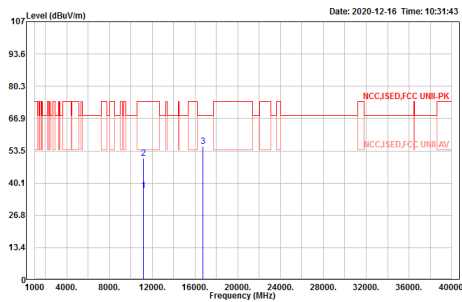
Freq	Level	Limit	Over	Read	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
1 111800.000	37.79	54.00	-16.21	29.15	8.64	Average
2 11800.000	50.68	74.00	-23.32	42.04	8.64	Peak
3 116500.000	53.64	68.20	-14.56	42.02	11.62	Peak

IEEE 802.11n HT20 Mode: 5500MHz Vertical



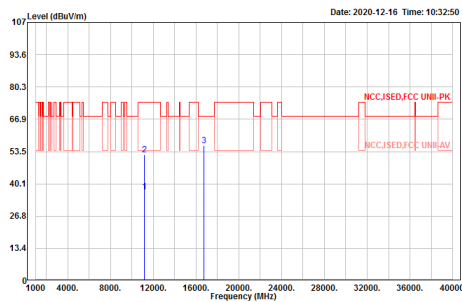
Freq	Level	Limit	Over	Read	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
1 111800.000	37.34	54.00	-16.66	28.70	8.64	Average
2 11800.000	51.35	74.00	-22.65	42.71	8.64	Peak
3 116500.000	53.75	68.20	-14.45	42.13	11.62	Peak

IEEE 802.11n HT20 Mode: 5580MHz Horizontal



Freq	Level	Limit	Over	Read	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
1 11160.000	37.13	54.00	-16.87	28.69	8.44	Average
2 11160.000	50.36	74.00	-23.64	41.92	8.44	Peak
3 116740.000	55.53	68.20	-12.67	42.57	12.96	Peak

IEEE 802.11n HT20 Mode: 5580MHz Vertical



Freq	Level	Limit	Over	Read	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	
1 11160.000	36.90	54.00	-17.10	28.46	8.44	Average
2 11160.000	52.32	74.00	-21.68	43.88	8.44	Peak
3 116740.000	56.11	68.20	-12.09	43.15	12.96	Peak

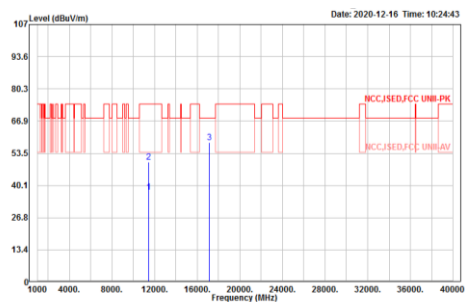
Note:

Result = Reading + Correct Factor

Margin = Result – Limit

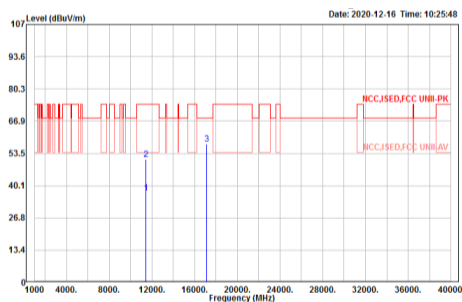
Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

IEEE 802.11n HT20 Mode: 5700MHz Horizontal



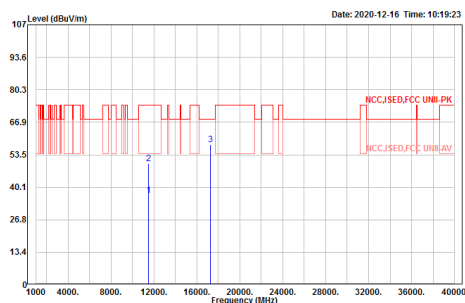
Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 111400.000	37.30	54.00	-16.70	28.55	dB/m	8.75	Average
2 11400.000	49.90	74.00	-24.10	41.15	dB/m	8.75	Peak
3 117100.000	57.99	68.20	-10.21	42.81	dB/m	15.18	Peak

IEEE 802.11n HT20 Mode: 5700MHz Vertical



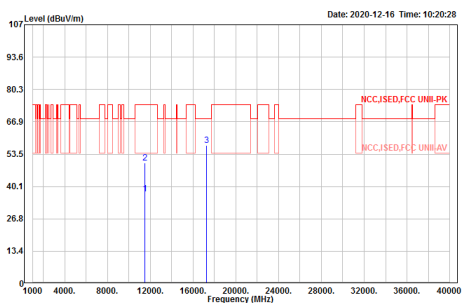
Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 111400.000	37.22	54.00	-16.78	28.47	dB/m	8.75	Average
2 11400.000	51.16	74.00	-22.84	42.41	dB/m	8.75	Peak
3 117100.000	57.39	68.20	-10.81	42.21	dB/m	15.18	Peak

IEEE 802.11n HT20 Mode: 5745MHz Horizontal



Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 111490.000	36.91	54.00	-17.09	28.36	dB/m	8.55	Average
2 11490.000	49.91	74.00	-24.09	41.36	dB/m	8.55	Peak
3 117235.000	57.57	68.20	-10.63	41.77	dB/m	15.80	Peak

IEEE 802.11n HT20 Mode: 5745MHz Vertical



Freq	Level	Limit	Over	Read	Level	Factor	Remark
MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 111490.000	37.09	54.00	-16.91	28.54	dB/m	8.55	Average
2 11490.000	49.84	74.00	-24.16	41.29	dB/m	8.55	Peak
3 117235.000	57.18	68.20	-11.02	41.38	dB/m	15.80	Peak

Note:

Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain